Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Withdrawn) A dry etching apparatus comprising:

a first electrode;

an evacuable chamber;

a plurality of second electrodes in said chamber, said plurality of second electrode being independent from each other; and

a plurality of high-power sources,

wherein said high-frequency power sources are independently connected to each of said first electrode and said plurality of second electrodes, and

wherein a material film on a substrate disposed on said plurality of second electrodes is etched by plasma generated between said first electrode and said plurality of second electrodes.

2. (Withdrawn) A dry etching apparatus according to claim 1, wherein said plurality of second electrodes comprises an electrode disposed below a central portion of said substrate, and electrodes disposed below corner portions of said substrate.

3. (Withdrawn) A dry etching apparatus according to claim 2, wherein an area of said electrode disposed below said central portion of said substrate is larger than that of said electrodes disposed below the corner portions of said substrate.

4. (Withdrawn) A dry etching apparatus according to claim 1, wherein said plurality of second electrodes have the same shape and size.

5. (Withdrawn) A dry etching apparatus according to claim 2, wherein among said plurality of second electrodes, a high-frequency power applied to said electrode disposed below said central portion of said substrate is different from that applied to said electrodes disposed below corner portions of said substrate.

6. (Withdrawn) A dry etching apparatus according to claim 2, wherein among said plurality of second electrodes, a frequency of a high-frequency power applied to said electrode disposed below said central portion of said substrate is the same as that of a high-frequency power applied to said electrodes disposed below corner portions of said substrate.

7. (Withdrawn) A dry etching apparatus according to any one of claims 1, wherein said substrate has an area of 0.3 m^2 or more.

8. (Withdrawn) A dry etching apparatus comprising:

a first electrode formed of a plane coil;

an evacuable chamber;

a plurality of second electrodes in said chamber, said plurality of second electrode being independent from each other;

a first high-power source connected to said first electrode; and

a plurality of second high-power sources independently connected to each of said plurality of second electrode,

wherein said material film on a substrate disposed on said plurality of second electrodes is etched using plasma generated by application of an AC electric field between said first electrode and said plurality of second electrodes.

9. (Withdrawn) A dry etching apparatus according to claim 8, wherein said plurality of second electrodes comprises an electrode disposed below a central portion of said substrate, and electrodes disposed below corner portions of said substrate.

10. (Withdrawn) A dry etching apparatus according to claim 9, wherein an area of said electrode disposed below said central portion of said substrate is larger than that of said electrodes disposed below the corner portions of said substrate.

11. (Withdrawn) A dry etching apparatus according to claim 8, wherein said plurality of second electrodes have the same shape and size.

12. (Withdrawn) A dry etching apparatus according to claim 9, wherein among said plurality of second electrodes, a high-frequency power applied to said electrode disposed below said central portion of said substrate is different from that applied to said electrodes disposed below corner portions of said substrate.

13. (Withdrawn) A dry etching apparatus according to claim 9, wherein among said plurality of second electrodes, a frequency of a high-frequency power applied to said electrode disposed below said central portion of said substrate is the same as that of a high-frequency power applied to said electrodes disposed below corner portions of said substrate.

14. (Withdrawn) A dry etching apparatus according to any one of claims 8, wherein said substrate has an area of 0.3 m^2 or more.

15. (Currently Amended) An etching method using an ICP etching apparatus provided with an upper electrode and a lower electrode being opposed to said upper electrode, said lower electrode comprising at least first and second electrodes, said upper electrode comprising one coil electrode overlapping ~~overlapped with~~ said first and second electrodes, the method comprising the steps of:

disposing a substrate on said first and second electrodes in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to said coil electrode to generate plasma;

applying a second high-frequency power to said first electrode disposed below a central portion of said substrate and applying a third high-frequency power to said second electrode disposed below corner portions of said substrate to apply an AC electric field between said coil electrode and said first and second electrodes;

~~generating plasma between said coil electrode and said first and second electrodes;~~ and

etching a material film on said substrate disposed on said first and second electrodes,

~~wherein said first high-frequency power is an ICP power,~~

~~wherein plasma wider than the width of the upper electrode is generated between said upper electrode and said lower electrode, and~~

wherein said second electrode is flush with said first electrode.

16. (Previously Presented) An etching method according to claim 15, wherein a frequency of each of said first, second, and third high-frequency power is the same.

17. (Canceled)

18. (Currently Amended) An etching method using an ICP etching apparatus, the method comprising the steps of:

disposing a substrate on a plurality of electrodes provided in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to a coil electrode to generate plasma, said coil electrode being opposed to said plurality of electrodes, and said coil electrode overlapping ~~overlapped with~~ said plurality of electrodes;

applying a second high-frequency power to an electrode disposed below a central portion of said substrate and applying a third high-frequency power to electrodes disposed below corner portions of said substrate;

~~generating plasma with a magnetic field or an electric field between said coil electrode and said plurality of electrodes;~~ and

etching a material film on said substrate disposed on said plurality of electrodes,

~~wherein said first high-frequency power is an ICP power,~~

~~wherein plasma is generated outside edge portions of said substrate, and~~

wherein said plurality of electrodes are flush with each other.

19. (Canceled)

20. (Currently Amended) A method of forming a wiring, the method comprising the steps of:

forming a conductive film on a substrate;

selectively forming a mask on said conductive film;

disposing said substrate on at least first and second electrodes provided in a chamber provided with a third electrode opposed to said first and second electrodes, said coil electrode overlapping ~~overlapped with~~ said first and second electrodes;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to said coil electrode to generate plasma;

applying a second high-frequency power to said first electrode disposed below a central portion of said substrate and applying a third high-frequency power to said second electrode disposed below corner portions of said substrate to apply an AC electric field between said coil electrode and said first and second electrodes;

~~generating plasma between said third electrode and said first and second electrodes;~~ and

selectively etching said conductive film on said substrate,

~~wherein said first high-frequency power is an ICP power,~~

~~wherein plasma wider than the width of the upper electrode is generated between said upper electrode and said lower electrode, and~~

wherein said first electrode is flush with said second electrode.

21. (Original) A method of forming a wiring according to claim 20, wherein said wiring is a gate electrode or a gate wiring of a TFT.

22. (Currently Amended) An etching method using an ICP etching apparatus,

providing at least first, and second electrodes, and a coil electrode overlapping ~~overlapped with~~ said first and second electrodes, the electrodes being independent from each other, said coil electrode being opposed to said first and second electrodes, and at least first, second, and third high-power sources independently connected to each of said first, second and coil electrodes, respectively, the method comprising the steps of:

disposing a substrate on said first and second electrodes provided in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

generating plasma by applying high-frequency power to ~~between~~ said coil electrode ~~and said first and second electrodes~~ by using ~~at least an ICP power~~ said third high-power source; and

etching a material film on said substrate disposed on said first and second electrodes,

wherein said first and second electrodes are disposed so that an electric power applied to an entire surface of said substrate becomes uniform,

~~wherein plasma wider than the width of the upper electrode is generated between said upper electrode and said lower electrode,~~ and

wherein said second electrode is flush with said first electrode.

23. (Canceled)

24. (Currently Amended) A method of manufacturing a semiconductor device using a dry etching apparatus,

providing at least first, and second electrodes, and a coil electrode overlapping ~~overlapped with~~ said first and second electrodes, the electrodes being independent from each

other, said coil electrode being opposed to said first and second electrodes, the method comprising the steps of:

forming a material film on a substrate;

selectively forming a mask on said material film;

disposing said substrate on said first and second electrodes provided in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to said coil electrode to generate plasma;

applying a second high-frequency power to said first electrode disposed below a central portion of said substrate and applying a third high-frequency power to said second electrode disposed below corner portions of said substrate;

~~generating plasma between said coil electrode and said first and second electrodes; and~~

etching a material film on said substrate disposed on said first and second electrodes; and **[[,]]**

dividing said substrate in order to obtain a plurality of substrates; **[[, and]]**

wherein said second electrode is flush with said first electrode.

25. (Original) A method of manufacturing a semiconductor device according to claim 24, wherein said semiconductor device is incorporated into an electronic device selected from the group consisting of a personal computer, a video camera, a mobile computer a goggle type display, a player, a digital camera, a front type projector, a rear type projector, a portable telephone a portable book, and a display.

26. (Currently Amended) An etching method comprising:

providing a radial line slot antenna supplying a microwave, at least first and second electrodes and at least first and second high-power sources independently connected to each of said first and second electrodes;

disposing a substrate on said first and second electrodes provided in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

generating plasma in a region between said **[[the]]** radial slot antenna and said first and second electrodes by supplying the microwave from said radial slot antenna; and

etching a material film on said substrate disposed on said first and second electrodes,

wherein said first and second electrodes are disposed so that an electric power applied to an entire surface of said substrate becomes uniform, and

wherein said first electrode is flush with said second electrode.

27. (Currently Amended) A method of manufacturing a semiconductor device comprising:

providing a radial line slot antenna supplying a microwave, at least first and second electrodes,

forming a material film on a substrate;

selectively forming a mask on said material film;

disposing said substrate on said first and second electrodes provided in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to said first electrode disposed below a central portion of said substrate and applying a second high-frequency power to said second electrode disposed below corner portions of said substrate;

generating plasma in a region between said **[[the]]** radial slot antenna and said first and second electrodes by supplying the microwave from said radial slot antenna; and

etching a material film on said substrate disposed on said first and second electrodes,

wherein said first electrode is flush with said second electrode.

28. (Previously Presented) A method of manufacturing a semiconductor device according to claim 27, wherein said semiconductor device is incorporated into an electronic device selected from the group consisting of a personal computer, a video camera, a mobile computer a goggle type display, a player, a digital camera, a front type projector, a rear type projector, a portable telephone a portable book, and a display.

29. (Currently Amended) An etching method comprising:

providing at least first, second, third, fourth, fifth, and coil electrodes and at least first, second, third, fourth, fifth, and sixth high-power sources independently connected to each of said first, second, third, fourth, fifth, and coil electrodes, said coil electrode overlapping ~~overlapped with~~ said first, second, third, fourth, and fifth electrodes;

disposing a substrate on said first, second, third, fourth and fifth electrodes provided in a chamber, wherein said first electrode is located below a central portion of said substrate and second, third, fourth and fifth electrodes are located below corner portions of said substrate;

supplying a reaction gas into said chamber under a reduced pressure;

generating plasma in a region between said first, second, third, fourth, and fifth electrodes and said coil electrode ~~overlapped with said first, second, third, fourth, and fifth electrodes~~ by applying a high-frequency power to said coil electrode using said sixth high-power source; and

etching a material film on said substrate,

wherein said first, second, third, fourth and fifth electrodes are disposed so that an electric power applied to an entire surface of said substrate becomes uniform, and

wherein plasma is generated outside edge portions of said substrate, and

wherein said first, second, third, fourth and fifth electrodes flush with each other.

30. (New) A method of manufacturing a semiconductor device by using an ICP etching apparatus, the ICP etching apparatus comprising an upper electrode and a lower electrode being opposed to the upper electrode, the lower electrode comprising at least first and second electrodes, the upper electrode comprising one coil electrode overlapping the first and second electrodes, the method comprising:

forming a thin film transistor over a substrate;

forming an interlayer insulating film over the thin film transistor;

disposing the substrate over said first and second electrodes in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to the coil electrode to generate plasma;

applying a second high-frequency power to the first electrode disposed below a central portion of the substrate and applying a third high-frequency power to the second electrode disposed below a corner portion of the substrate; and

etching the interlayer insulating film in order to form a contact hole.

31. (New) A method of manufacturing a semiconductor device by using an ICP etching apparatus, the ICP etching apparatus comprising an upper electrode and a lower electrode being opposed to the upper electrode, the lower electrode comprising at least first and second electrodes, the upper electrode comprising one coil electrode overlapping the first and second electrodes, the method comprising:

forming a semiconductor film over a substrate;

forming a conductive film over the semiconductor film;

forming a mask over the conductive film;

disposing the substrate over the first and second electrodes in a chamber;

supplying a reaction gas into said chamber under a reduced pressure;

applying a first high-frequency power to the coil electrode to generate plasma;

applying a second high-frequency power to the first electrode disposed below a central portion of the substrate and applying a third high-frequency power to the second electrode disposed below a corner portion of the substrate; and

etching the conductive film in order to form a gate electrode.